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SECURITY.

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TACTICAL AND TECHNICAL NOTES ON THE GERMAN ARMY (SERIES No.9)

(Based on information received up to 30th November, 1939)

This series includes notes on the following subjects:-

- (1) Note on German tactics in the West. (French G.S).
- (2) Note on German operations in Poland. (French G.S).
- (3) Note on the tactical employment of enemy aircraft.
- (4) Description of German aircraft.
- (5) German A.A. Defences.
- (6) Small German balloons in France.

NOTE BY THE FRENCH G.S. ON THE GERMAN POSITIONS BETWEEN THE
RHINE AND MOSEL AND ON THE ACTIVITY OF THE DIFFERENT A.R.S.

The German forces between the Rhine and the Mosel consist at the present time of 15 divisions of which at least 8 are reserve divisions; they cover a front of 95 miles. On 20th November the German dispositions were of a defensive nature. These dispositions rest on a system of permanent fortifications from NEUBURG to METTLICH.

(a) Infantry.

The disposition of the infantry appears to be the same in all divisions, viz. three regiments in line each having one battalion in the front line, one battalion in support and one battalion in reserve.

The width of the sub-sectors varies between 2,000 and 4,000 yards. Relief takes place in rotation by battalions at intervals of one to two weeks.

(i) Battalion in the front line.

If the permanent fortifications are sufficiently close to the line of observation, as for example in the LAUTER and HARDT area, the battalion in the front line occupies pill boxes; if not it mans posts in advance of the fortified positions. The organization of these advanced posts varies according to the ground or perhaps to the tactical doctrine in force in the particular division; in certain sectors the battalion in the front line digs in, making weapon pits, O.Ps, Cd posts, etc. connected together by fire trenches and communication trenches and covered by auxiliary defences. The position to be defended is clearly defined and easily referred to on the map. Elsewhere the defences are irregular and of great depth. In other places it is difficult to discover even the commencement of defensive works; the battalion is invisible, hidden in the woods and villages; it may be assumed that the companies there do not always occupy the same positions and that they move about in the interior of the sub-sector; but it is probable that in these apparently dead zones our troops must expect to meet the greatest number of mines and booby-traps. It might be mentioned in this connection that the use of these devices is not without danger to the defence itself; in spite of the precautions taken (pre-determined routes which patrols and fatigue parties have to follow), the accidents caused to the Germans by their own mines are numerous and cause them continual anxiety.

There is no doubt that front line battalions have received orders to resist any enemy attack stubbornly and that they must not yield ground without orders.

Observation troops are pushed forward in advance of their units to a distance of as much as 6,000 yards. They take up positions which are fairly far apart (500 to 1,000 yards). These posts keep a very sharp lookout. During the day no move within their radius of observation can take place unnoticed. During the night they often use dogs as an additional precaution; they do not withdraw until they receive orders from the rear.

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(ii) Battalion in support.

This battalion on the greater part of the front occupies the system of small concrete defensive works, though it may also take up a position forward or to the rear of the same according to the siting of the defensive works with respect to the front line. It is employed on the completion of field fortifications, the organization of the fortified position or in the preparation between this and the advanced posts of a second defensive zone provided with anti-tank obstacles in the form of deep pits (NENNING-TETTINGEN-OBERLEUKEN-ORSCHOLZ, between the Mosel and the Sarre near METTLACH).

(iii) Reserve battalion.

This battalion is billeted in the still inhabited villages 10, 12 or 15 km behind the front line.

(b) Tactics of the German infantry.

- (i) The tactics of the German infantry in the defensive sector are by no means passive. Front line units do not remain on the defensive; their aim is rather to instill a feeling of insecurity by means of patrols, raids and reconnaissances in force.

Patrols usually operate at night; their task is to establish contact; they avoid engagement and retire on meeting the enemy, making use of the moral and material effect of the sub-machine guns with which they are armed.

Raids or reconnaissances in force are carried out by day as well as by night either by parties from the unit occupying the line (sections or companies) or by specialized detachments (Stosstruppen). The term "Stosstruppen" is applied ordinarily to detachments made up from carefully selected and trained volunteers. The formation responsible for their organization and training is not known; it is probably higher than regimental headquarters. The fighting unit of a "Stosstruppe" appears to be a detachment of about a dozen men. These are armed, some with rifle and bayonet, others with pistol and dagger or sub-machine gun, a most dangerous weapon in hand-to-hand combat; all carry hand grenades; the N.C.Os carry Very pistols, whistles and pocket torches. The detachment is also equipped with wire-cutters, sharpened spades, gloves for handling barbed wire and a canvas sheet for transporting booty, dead and wounded. All the members bear a distinctive badge which is clearly recognizable. They are not hampered by cumbersome equipment (gas mask) and do not carry any kind of document on them.

- (ii) These detachments operate either singly or in numbers - very often in pairs under the command of two officers. The procedure in carrying out raids appears to be as follows:-
very careful observation of the ground, of the position and of the movements of the enemy throughout the day. Starting at dusk the "Stosstrupp"

moves forward to its objective, whilst continuing to keep a sharp lookout. The attack is launched before dawn or in broad daylight if the O.C. considers this preferable, one of the detachments revealing itself first and holding the enemy whilst the other moves round and tries to attack him in the rear or to cut off his retreat.

It is to be noted that German raids do not aim at territorial gain but at taking prisoners or equipment. To have pushed back the enemy is not enough; the raid is only a success if prisoners, arms or documents are brought back.

- (iii) The Germans have also given the name of "Stosstruppen" to battalions or groups of battalions selected for offensive action entailing methodical preparation. In this case the operation is preceded by a full-dress rehearsal behind the front on suitable ground, positions being taken up only at the last minute.

Up till now German armoured fighting vehicles have been very rarely employed on the Western Front and even then in very small numbers.

(c) Life of the infantry in the pillbox system of defences.

A description of the German fortified position (general organization, different types of defence works, armament and auxiliary defences) does not come within the scope of the present paper. The following points are, however, worthy of note:

The occupation of the German fortified position requires the same number of infantry as would be necessary for a field defence system. At least one battalion is required per 1,000 yards of front; whatever the extent of the defensive works, whether sited in depth or as a single line, or whether the troops can be quartered entirely in the casemates, no saving in manpower is possible. The first line divisions are, therefore, insufficient to man the fortified areas covered by their sectors and prisoners no longer speak of the special troops which at the beginning of the campaign guarded the frontier between the Rhine and the Mosel. If the Siegfried line should be attacked the German High Command would be forced to bring into the line a large number of divisions as reinforcements.

(d) Artillery.

- (i) It is to be noted that German infantry regiments are each equipped with their own artillery comprising 27 light mortars (2-in-calibre), 18 heavy mortars (3.12-in calibre), 6 light infantry guns (2.95-in calibre), 2 heavy infantry guns (5.9-in calibre). These weapons permit them to deal with close range opposition without calling upon the divisional artillery. No information is yet available regarding the disposition of the divisional and A.A. artillery. Batteries are usually located behind the fortified system and are protected by anti-tank obstacles. Some of them move forward as far as the infantry guns, firing mostly by sections, and taking up fresh positions from time to time to avoid our counter-battery fire.

Except for a certain number of anti-tank guns fulfilling special tasks such as the defence of narrow gaps, there is little artillery in the casemates. There is some indication that groups of light A.A. artillery are employed very close to the front forward of the line of pillbox defences.

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(ii) The German artillery, which is very active, answers every shot of ours and is always determined to have the last word; in particular it attacks our field artillery which it locates no doubt by sound very soon after it has opened fire. The fire of the German artillery is accurate and rapid; concentrated fire is obtained in a few seconds by groups which often make use of the maximum range of their guns. A large number of shells fail, however, to explode (25% according to observations made by a division in the course of the September operations).

(iii) The participation of artillery in infantry raids is:-

by preparatory fire often directed on several points to mislead the enemy. (Some surprise attacks have been made in the daytime on objectives whose rear communications alone had been shelled, while artillery preparation was continued on other parts of the front), and by firing box barrages round objectives and using defensive fire for covering withdrawals.

(e) Cavalry.

A few reconnaissance groups have been accompanying infantry battalions in offensive actions conducted since 16th October. The Germans seem to have withdrawn them from the sector subsequently. The divisional cavalry is kept in reserve and is probably intended for counter attack should the advanced positions be unexpectedly broken through.

(f) Engineers.

German engineer units are not only called upon to carry out certain technical tasks but accompany the infantry in the attack. The engineers then serve as infantry capable of handling not only the usual infantry weapons but special equipment such as flame throwers, smoke producers, explosives, etc. On this account they are often included in the composition of "Stosstruppen".

One of their duties is to remove as quickly as possible mines left in trenches, O.Ps, dugouts, etc. evacuated by the enemy.

On several occasions German engineers have by their intrepid behaviour won the admiration of the German infantry to whom they are anxious to appear as troupes d'elite.

(g) Conclusions.

The method of occupying the Saar and Palatinate front is characterized on the German side by the paucity of infantry in the front line. The strength of the dispositions is all the same indubitable. It is based not only on the existence of the permanent fortifications but also on the mobility and morale of the troops.

Especially noteworthy is the Germans' keenness on obtaining information (Aufklärung) which manifests itself by continual observation, patrol activity and frequent raids which are very carefully prepared.

The German High Command thus shows that in its opinion the offensive spirit is indispensable to the troops even when they are carrying out a purely defensive task.

EXTRACTS FROM A FRENCH G.S. REPORT ON SOME CHARACTERISTICS OF
THE GERMAN OPERATIONS IN POLAND. (September, 1939).

(a) Attack on position held by infantry.

- (i) The tank attack was launched after artillery preparation supported by concentrated machine gunning from large numbers of aircraft.
- (ii) Break-through was carried out by large armoured formation after which the main body consisting of 400 or 500 tanks in several echelons attacked, viz.

First echelon. Light tanks whose task was to discover defensive points which the artillery and aircraft preparatory fire had failed to destroy. These light tanks which were insufficiently armoured proved very vulnerable (the armour being pierced by Mauser bullets). This echelon usually suffered severe casualties.

Second echelon. Small tanks and tanks carrying guns at a distance of about 1,000 yards behind the first echelon opened fire on isolated centres of resistance at a range of 1,500 yards.

Other echelons. Their duty was to support and extend operations. These consisted of 5 $\frac{1}{2}$ or 6 $\frac{1}{2}$ ton high speed tanks capable of moving over all kinds of ground even on considerable gradients (Tatra mountains). At the same time their armour was in the majority of cases inadequate.

- (iii) The infantry followed the successive waves of tanks and confined themselves to mopping up and occupying the position.

(b) Attack on position held by artillery.

After having advanced over the ground held by the infantry the tanks engaged directly that portion of the Polish artillery which the German aircraft and artillery fire had already partially put out of action, thus preventing these batteries from continuing their counter battery fire. The Poles especially relied on their artillery for anti-tank defence.

(c) Conclusions.

The essential principles of German tactics in Poland appeared to have been as follows:-

To make minute preparations as regards the ground to be attacked, in particular with the help of a well organized intelligence service.

To select and define the sectors to be attacked in order to isolate them easily and to outflank them.

To penetrate the enemy's positions by a savage and massed use of artillery, aircraft and tanks operating in close liaison.

To pass by centres of resistance.

To destroy communications and liaison and thus to paralyse headquarters; all these tasks were allotted to raiding mechanized units who were called upon to operate as far forward as possible without regard to the general advance of the German forces.

NOTE ON THE TACTICAL EMPLOYMENT OF ENEMY AIRCRAFT IN SO FAR AS
IT AFFECTS A.A. DEFENCE.

(i) Enemy fighters usually appear over the lines about 20 to 25 minutes after the arrival of our own patrolling aircraft.

Attacks are usually made on our aircraft from the direction of the sun or by using clouds to cover their approach. The fighter attack has frequently followed a salvo of 12 to 15 A.A. shell bursts round the aircraft to be attacked.

When a Messerschmitt attack is carried out against single seaters, the method so far is for one patrol of Messerschmitts to attack from in front and above while the main attack is carried out from behind and above.

Against reconnaissance aircraft the attack is either by single aircraft in line astern from behind and on the same level, or by two aircraft at the same level or slightly above and by another from below.

Against bomber formations of three or four aircraft the formation is generally concentrated on one of the bombers, usually not the leader. It is carried out either by single aircraft in line astern from above or by all aircraft simultaneously, in which case it is not repeated.

Enemy fighters have on occasions attacked our aircraft at unexpectedly great distances behind our lines.

(ii) The escape tactics employed by the Germans are of interest to the ground A.A. defence. When wishing to evade a dangerous situation due either to accurate gunfire or more often to the approach of fighter aircraft, they commonly stall their machines and drop almost vertically for a considerable distance. On recovery at about 1,000 feet, the descent is continued more gradually to a height of perhaps 150 or 200 feet. In the course of this manoeuvre the descent is so steep as to give the impression that the aircraft is undoubtedly crashing. This has the effect of leading light A.A. units to withhold their fire and in many instances to the reporting of a crash which has not in fact occurred.

In Poland reports state that German bombers avoided anti-aircraft fire by losing height rapidly immediately before delivering their attack.

German machines, after carrying out their attack or exhausting their bombs make no effort to regain height after the bombing dive, but make away very low, sometimes flying at not more than 100 feet.

DESCRIPTION OF GERMAN BOMBERS AND
FIGHTERS.

(a) Messerschmitts 109 Fighter.

It is believed that the majority of these have the D.B. 600 engine or the Jumo 211, the latter giving it a speed of about 315 m.p.h., and 330 m.p.h. with the D.B. 600 engine.

(b) JU 52.

This is a troop carrier holding 15 men and has a maximum speed of 180 m.p.h. with a range of 805 miles, load 3,000 lb, or 1,100 miles with a load of 1,000 lbs.

(c) JU 88 Longrange bomber.

This machine is believed to have a single rudder and forward protruding engine nacelles. Bombs may be carried outside the wings to make dive bombing possible. The maximum speed is now believed to be under 310 m.p.h. with a cruising speed of less than 260 m.p.h., and its range is probably about 1,100 miles.

(d) Me 110.

This is a twin engined fighter. Forward armament is good, and although its rear defence is not very effective, this aircraft would not rely on its rear armament to provide protection for bombers under escort. It would turn and fight as a single seater fighter would. Its range is not definitely known but it could probably reach the East Coast of England as far north as Sunderland.

(e) Heinkel He 111.

This is the principal German bomber. In December 1938 it was being fitted with the Jumo 211 engine giving it a speed of 236 m.p.h. at 14,000 ft. A small portion of these machines may be fitted with the D.B. 601 engine of 1,115 h.p. giving a maximum speed of 255 m.p.h. at 14,700 feet. Its chief defect is the weakness of its defensive armament. Owing to the fact that this machine is fitted with vertical bomb stowages it is not likely to be used for steep dive-bombing.

(f) German aircraft in the light of recent air raids.

- (i) Recent results of air fighting show that the defensive armament of German bombers is insufficient to withstand attack by the modern eight-gun fighter. Failure to develop the turret is making it difficult for them to bring mutually supporting fire to bear.

For this reason, it seems likely that German bombers will continue to rely for protection on dispersion and concealment in cloud rather than on concentration in large formations. The German Air Force may also study the question of fitting armour plating as protection for crews.

(ii) Dive Bombing.

It is reported that the JU 88 will play an important part in any dive bombing against our fleet or merchant ships. There is also evidence that bomber Units have been practising dive bombing against moving targets in the Baltic.

NOTE ON GERMAN A.A. DEFENCES.(a) Warning System.

The ground look-outs appear to be closely linked to fighter aerodromes and pass precise information of the type and numbers seen and also their position and height. This is shown by the surprise appearance of German fighters which generally outnumber our machines.

The chief medium for location appears to be by sound which, though effective in the case of a single high flying aircraft, is less effective with a number at various heights.

The entire country is covered by look-out posts arranged in look-out lines running at right angles to each other. The distance between posts is about six or seven miles. A look-out post consists of one man in charge and three shifts of three men, i.e. one observer, one telephonist and one relief. Aerodrome look-out posts, Flak units, and aircraft in the air are also used.

It has been reported that confidence in early warning of the approach of enemy aircraft is so great that the lights of the Kiel canal are kept lit until the warning signal is received. This is probably partly due to the elaborate system of aircraft reporting ships in the Heligoland Bight.

This confidence; however, appears to have been shaken recently. On October 4th black-out regulations, that had previously been in abeyance, came into force in the area east of a line approximately Stelten, Frankfurt-on-Oder and Dresden. This no doubt followed on the appearance of Royal Air Force aircraft over Berlin on October 2nd.

(b) Co-operation between aircraft and guns.

It is suggested, but not confirmed, that German fighters on patrol communicate the speed and height of our aircraft to their A.A. batteries, probably by R/t. On the other hand a report dated 25th October, 1939, stated that no systematic co-operation between Flak and Fighter aircraft appears to exist.

(c) A.A. Fire - Co-ordination between batteries.

Aerodrome A.A. defence positions are usually two gun positions.

Great accuracy of A.A. fire has been met up to 18,000 feet.

There is some evidence that the enemy has some system for concentrating the fire of several batteries in a form of barrage.

This method of fire has not proved very successful at night.

(d) Employment of Searchlights.

The German fighters do not appear to co-operate with searchlights. On the few occasions when they have been encountered at night, they have attacked without the help of searchlights. Flak fire, however, is mainly directed by aid of searchlights. Searchlights are sometimes dowsed almost simultaneously with the opening of fire.

SMALL GERMAN BALLOONS IN FRANCE.

It is reported that small German balloons have come down in France.

(a) Small white meteorological balloons, each carrying a thermometer, a hair hygrometer, a short wave W/T transmitter and an instrument which converts into W/T signals the readings given by the measuring apparatus.

(b) Small balloons (apparently also white), each carrying a small clock, a cam on the back of which is connected with the movement of the clock hands. The cam, as it turns, releases a number of metal blades, and it is thought that packets of leaflets, attached to the blades, may have been released in succession by the clockwork movements. Certainly, a leaflet reproducing in French extracts from Hitler's Reichstag speech of 6 Oct, found near NANCY, had two holes which would have fitted the fasteners.

(c) A small red balloon, like a toy, has also been found, but it is not known for what purpose it had been released.